

WHAT IS CLAIMED IS:

1. A filter device comprising:

a filter for filtering liquid to be filtered and separating impurity particles contained in the liquid to be filtered; and

a deposit recovery tank for depositing particles having a specific gravity greater than that of the liquid to be filtered out of the impurity particles, which are not filtered but separated by the filter, so as to recover them at a position apart from the filter.

2. A filter device according to claim 1, wherein the deposit recovery tank is disposed under the filter, and

an orifice is formed at an inlet of the deposit recovery tank.

3. A filter device according to claim 1, wherein the deposit recovery tank is provided with an inner wall surface formed into a substantially conical shape whose diameter is reduced toward a recovery port, through which a deposit is recovered.

4. A filter device comprising:

a filter for filtering liquid to be filtered and separating impurity particles contained in the liquid to be filtered; and

a floating material recovery tank capable of allowing a component of a smaller specific gravity to float and recovering it out of liquid filtered by the filter.

5. A filter device according to claim 4, wherein the floating material recovery tank is disposed above the filter, and

an orifice is formed at an inlet of the floating material recovery tank.

6. A filter device according to claim 4, wherein the floating material recovery tank is provided with an inner wall surface formed into a substantially conical shape whose diameter is reduced toward a recovery port, through which a floating material is recovered.

7. A filter device comprising:

a filter for filtering liquid to be filtered and separating impurity particles contained in the liquid to be filtered;

a deposit recovery tank for depositing particles having a specific gravity greater than that of the liquid to be filtered out of the impurity particles, which are not filtered but separated by the filter, so as to recover them at a position apart from the filter; and

a floating material recovery tank capable of allowing a component of a smaller specific gravity

to float and recovering it out of liquid filtered by the filter.

8. A filter device according to claim 7, wherein the deposit recovery tank is disposed under the filter, the floating material recovery tank is disposed above the filter, and

orifices are formed at inlets of the deposit recovery tank and the floating material recovery tank, respectively.

9. A filter device according to claim 7, wherein the deposit recovery tank is provided with an inner wall surface formed into a substantially conical shape whose diameter is reduced toward a recovery port, through which a deposit is recovered, and

the floating material recovery tank is provided with an inner wall surface formed into a substantially conical shape whose diameter is reduced toward a recovery port, through which a floating material is recovered.

10. A filter device according to any one of claims 1, 4 and 7, wherein the filter is a bag-like filter bag, the filter being disposed with the opening end thereof oriented downward at the time of installation.

11. A filter device according to claim 10, further comprising an opening end seal formed into

a substantially cylindrical shape having expansibility and contractility, one end being supported on a side of a case while the other end being brought into contact with the opening end of the filter bag.

12. A filter device according to claim 11, wherein the inlet for introducing the liquid to be filtered is formed on a side opposite to the filter bag across the opening end seal; and

the inlet is disposed such that the liquid to be filtered flowing through the inlet can exhibit a cyclone effect.

13. A filter device according to claim 10, wherein the filter bag is supported on a side opposite to the opening end of the filter bag by a member constituted of a rigid body.

14. A filter device according to claim 7, wherein a first pipe capable of discharging the deposit from the deposit recovery tank at all times is connected to the deposit recovery tank; and

a second pipe capable of discharging the floating material from the floating material recovery tank at all times is connected to the floating material recovery tank.

15. A filter device according to claim 4 or claim 7, further comprising:

a floating material separating tank for

separating the floating material from the fluid containing the floating material staying inside the floating material recovery tank by specific gravity difference separation; and

a pump for feeding the fluid containing the floating material staying inside the floating material recovery tank from the floating material recovery tank to the floating material separating tank.